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## Reflection of the Importance of Public Health System to Promote Pro-vaccination Behavior Regarding COVID-19 in Brazil

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**Abstract**

In Brazil, and worldwide, we are reaching a critical moment in the COVID-19 pandemic. As the number of virus mutations grows, a paradoxical stabilization in the number of vaccinated individuals is concerned. In this letter, our goal is to raise awareness about the fundamental role we believe public health systems have in promoting communication policies that inform, reassure, and encourage vaccination without compromising individuals' freedom. We do so by providing key demographics on vaccination rates in Brazil, contrasting current infection rates. Furthermore, we also raise a series of research questions that we believe should be timely addressed by the scientific community to generate empirical evidence that will support effective policy and public administration.



SCAN ME



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Dear Editor,

We are reaching a crucial moment in the COVID-19 pandemic. At this time, several variants of the virus (such as the Delta and Omicron variants, for example) are emerging, largely based on environmental factors that favor their emergence [1]. Among these factors, we can consider, for example, the lowest level of vaccination in Southern African countries, and the relaxation of people in adopting protective social measures. It becomes a major global public health problem since the variants could become even more contagious in the poorest and most underdeveloped countries, whose vaccine availability is much lower compared to economically developed countries. With enthusiasm we read some publications, for example, Ng et al. [2], considering how important people being connected with others were during the coronavirus disease in 2020 and 2021 to promote mental health related to the confrontation to the disease. The promotion of mental health is also a global public health concern. Suicide cases have increased in certain layers of the world population due to the mental impacts of the COVID-19 pandemic [3, 4].

We want to expand the debate considering that we are arriving at a delicate moment around the world in general and Brazil in particular. Some countries have already reached the greatest possible number of vaccinated people among those who have positive attitudes towards the vaccine [3]. The favorable predisposition to vaccination is determinant for vaccination *en masse*. In general, people who have mental models favorable to vaccination have been vaccinated [5, 6]. Considering the Brazilian reality, the total current rate of people vaccinated (with two doses) is 59.73% (Table 1). As can be seen below, data have shown that the number of doses applied in Brazil has been decreasing over the last months. The vaccination curve in Brazil appears dangerously stabilized. Our point here, according to Kamacooko et al. [7], is to shed some light on the percentage of adults who do not want to be vaccinated against COVID-19. Freedom and autonomy are fundamental values. The ability to self-determine conduct and action is perhaps the fundamental condition of law and freedom [8]. But, more than that, social responses require ethical behaviors as medical and social premises: the control of the pandemic, according to World Health Organization (WHO) [9], considering

available vaccines, depends on the rate of vaccination of the population. However, the rate of vaccination is not only dependent on political expediency regarding the implementation of a vaccination program, but also on citizens' willingness to be vaccinated. However, as mentioned before in this letter, in Brazil, as an example, the number of citizens being vaccinated is stabilizing. This would not be troublesome if the percentage of the population that has been vaccinated was not around 50%, while the number of mutations and infection rate increases. All this led us to the inquiry: What makes a person not want to get vaccinated? What are the resilience and coping strategies of these people to face COVID-19? What kind of social attitudes and behaviors shape these people's lines of thought?

We consider that the degree of awareness of people to adhere to vaccination seems to depend on two fundamental factors: the concrete space (body and social space) and the ethical-citizen behavior (individual, collective and historical). The moral conscience is at the base of behavior associated with the vaccination [6]. Our point here is that scientific concepts and methods need to be brought to the reality of understanding unsocial behaviors, through psychological and social representations, actions, and behaviors. Those who refuse to get vaccinated do so because of their beliefs (a characteristic of self-determination of action through conscience, judgments, and reasoning) moved by their passions and convictions. It is necessary to think about change behavior influenced by public policies, based on this factual reality in the light of impressions, arising from sensibility, according to Hume's thought. What is these people's logic of argumentation? What is necessary to convince them that vaccination is the main strategy for combating the virus? We believe that it is necessary to make use of multidisciplinary scientific approaches, considering Descartes' concept of identities and differences, to tackle such a challenge.

Additional questions that can only be addressed through a multidisciplinary approach include: What negative mental attitudes are associated with the refusal of getting vaccinated? What are the values or beliefs that guide their behavior? Does the level of education influence their decision? Does the type of information received (true or fake news) influences the decision not to get vaccinated? Is there a greater

**Table 1** Official data retrieved from Covid-19 Casos e Óbitos and COVID-19 Vacinação.

Reference date (2021)*	New cases of COVID-19	Accumulated cases of COVID-19	New confirmed deaths by COVID-19	Accumulated confirmed deaths by COVID-19	Total number of vaccine doses applied **
February 18th	51.88	10.030.62	1.37	243.46	6.870.29
March 15th	36.23	11.519.61	1.06	279.29	17.332.15
April 16th	85.77	13.832.46	3.31	368.75	23.931.94
May 15th	67.01	15.586.54	2.09	434.72	21.742.45
June 17th	74.04	17.702.63	2.31	496.00	32.471.87
July 19th	45.59	19.391.85	542	542.76	42.379.69
August 19th	28.38	20.556.48	698	574.21	53.275.59
September 19th	9.45	21.239.78	244	590.75	45.308.79
October 18th	7.44	21.651.91	183	603.46	35.674.99
November 19th	13.35	21.989.96	293	612.14	13.429.85

\* Official data retrieved from Covid-19 Casos e Óbitos (saude.gov.br)

\*\* Official data retrieved from COVID-19 Vacinação (saude.gov.br)

sense of criticality regarding the effectiveness of medications not natural to the human body? Is there a subjective consciousness based on the human complex of the 'super man' or the indestructible 'wonder woman'? What ethical or moral reasons govern their pattern of conduct or behavior? How do anxiety and fear of the COVID manifest among people who refuse to vaccinate? Is there already a history, since childhood, of not being vaccinated? What is the impact of regional and country culture, when deciding not to vaccinate? These questions serve as a good start in trying to rationally demonstrate the arguments that are presented. Public policies for adherence to vaccination need to be created and be more effective. Adhering or not to the vaccination involves human subjectivity, but this cannot overcome broader social and collective interests. Some bridge needs to be built.

### Conflict of interest

The author(s) declared no potential conflicts of interest for the research, authorship, and/or publication of this article

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